

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Cancelled)

2. (Currently Amended) A hammer drill for applying rotational forces and percussive forces to a drill bit, comprising:

a motor;

a percussive force converter mechanism driven rotationally by said motor for modifying percussive forces of said ~~percussive member~~ hammer drill by changing ~~[[the]]~~ a rotational speed ratio of said motor and ~~[[said]]~~ a connector shaft;

a connector shaft driven rotationally by said percussive force converter mechanism;

a spindle capable of holding said drill bit, wherein ~~[[the]]~~ a rotational force through said connector shaft is propagated;

a motion converter mechanism for converting the rotational force of said connector shaft to a reciprocating force in an axial direction in said spindle; and

a percussive member for applying a percussive force in an axial direction to the drill bit held in said spindle based on the reciprocating force converted by said motion converter mechanism,

wherein said percussive force converter mechanism comprises a plurality of gears with mutually differing numbers of gear teeth,

wherein the plurality of gears can move freely in an axial direction of said connector shaft, ~~[[and]]~~

wherein a shifting switch selects a gear from the plurality of gears and the selected gear meshes, by a force of a spring, to gear teeth equipped on said connector shaft, and

wherein mating teeth of a gear that mates with the gear teeth of said connector shaft side are provided with sidewalls on one side in an axial direction thereof.

3. (Canceled)

4. (Previously Presented) A hammer drill according to claim 2, wherein one of the gear teeth on said connector shaft side and the mating teeth of said gear that meshes with said gear teeth have different axial-direction lengths on alternating teeth.

5. (Previously Presented) A hammer drill according to claim 2, wherein one of the gear teeth on said connector shaft side and the mating teeth of said gear that meshes with said gear teeth are provided every other tooth.
6. (Previously Presented) A hammer drill according to claim 2, wherein a sleeve is affixed to said connector shaft, wherein said sleeve is equipped with a spring that provides a force on said selected gear.
7. (Previously Presented) A hammer drill according to claim 2, wherein said percussive force converter mechanism is provided with a shifting shaft between a pair of gears, wherein, when said shifting shaft is moved in the axial direction of said connector shaft to remove one gear, against the force of the spring, away from the gear teeth of said connector shaft side, a second gear is moved by the force of a spring to a position where the second gear meshes with the gear teeth on the connector shaft side.
8. (Currently Amended) A hammer drill according to claim 7, wherein said shifting shaft is disposed off-center relative to ~~[[the]]~~ a center of rotation of a shifting switch on the axis of said connector shaft.
9. (Previously Presented) A hammer drill according to claim 7, wherein said pair of gears is equipped with a specific gap in the axial direction of said connector shaft, and a space for obtaining a neutral state in which none of the pair of gears meshes with the gear teeth on said connector shaft side is formed between said pair of gears.
10. (Previously Presented) A hammer drill according to claim 9, wherein equilibrium positions of the springs that provide forces onto each of the gears of said pair of gears is in the position of said neutral state.

11. (Currently Amended) A hammer drill comprising:

a motor;

a transmission mechanism driven rotationally by said motor;

a connector shaft driven rotationally by said transmission mechanism,

wherein said transmission mechanism is configured to change a rotational speed ratio between said motor and said connector shaft;

a spindle having a chuck to hold a drill bit, configured to rotate by a rotational force through said connector shaft;

a motion converter mechanism configured to convert the rotational force of said connector shaft to a reciprocating force in an axial direction of said spindle; and

a percussive member configured to reciprocate in an axial direction of said spindle based on the reciprocating force converted by said motion converter mechanism,

wherein said spindle is percussed by the percussive member, while rotating based on the rotational force through said connector shaft, [[and]]

wherein said transmission mechanism comprises:

a plurality of gears of different diameters which can move in the axial direction along said connector shaft;

gear teeth provided around said connector shaft;

wherein one of said plurality of gears selectively meshes with said gear teeth of said connector shaft by a force of a spring, and

wherein said plurality of gears are configured to concentrically rotate on said connector shaft.

12. (Previously Presented) A hammer drill according to claim 11, wherein said transmission mechanism further comprises:

a pinion, having a plurality of gear portions in different diameters, provided on an axle of said motor,

wherein the plurality of gears mesh respectively with the plurality of gear portions of said pinion.

13. (Previously Presented) A hammer drill according to claim 11, wherein each of said plurality of gears comprises inner gear teeth to be selectively meshed with said gear teeth of said connector shaft.

14. (Canceled)

15. (Previously Presented) A hammer drill according to claim 14, wherein each of said plurality of gears is disposed at an interval in the axial direction of said connector shaft.

16. (Previously Presented) A hammer drill according to claim 15, wherein a gap for a neutral state that none of said plurality of gears meshes with said gear teeth of said connector shaft is formed between said plurality of gears.

17. (Previously Presented) A hammer drill according to claim 11, further comprising a spring disposed around said connector shaft for biasing said plurality of gears.

18. (Previously Presented) A hammer drill according to claim 11, further comprising a shifting switch operatively connected to said connector shaft, wherein one of said plurality of gears selectively meshes with said gear teeth of said connector shaft by operation of said shifting switch.